Royal Botanic Gardens
Melbourne
- 9 FEB 2001
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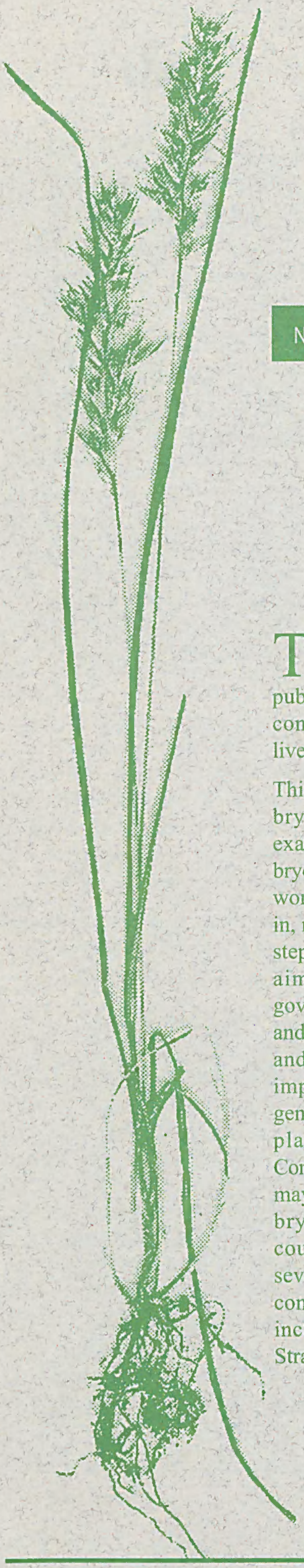

Danthonia

Volume 9 Number 3
December 2000

NEWSLETTER OF THE AUSTRALIAN NETWORK FOR PLANT CONSERVATION INC.

Global Action to Conserve Bryophytes

The IUCN (the World Conservation Union) will shortly be publishing an action plan to guide the conservation of bryophytes (mosses, liverworts, and hornworts) worldwide.

This Action Plan reviews the status of bryophytes worldwide and provides examples of habitats currently rich in bryophytes. It is aimed at individuals who work in the field of, and have an interest in, nature conservation, and wish to take steps to conserve bryophytes. It is also aimed at governmental and non-governmental organisations, politicians, and the general public. These individuals and organisations have the ability to implement the recommendations and general initiatives forwarded within this plan. The United Nations (UN) Convention on Biological Diversity (CBD) may be a legislative option for effective bryophyte conservation in some countries. One hundred and seventy seven countries have now ratified this convention, and bryophytes should be included in the National Biodiversity Strategy and Action Plan of each country.

This Action Plan suggests a number of more general initiatives, including:

- Increasing inventories in the tropics to determine bryophyte richness and to determine which species are locally common, rare, or threatened.
- Establishing protected areas or national systems of protected areas.
- Incorporating bryophyte conservation in development and industrial activities.
- Furthering understanding of the ecological requirements of individual species, plus their taxonomy and distribution.
- Training local people to become specialists. Because of the speed at which natural environments are disappearing worldwide, this initiative is extremely urgent and should be implemented immediately.
- Creating user-friendly regional identification guides.

(Continued on page 4)

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Danthonia

Editors

Fiona Hall
Jeanette Mill
With thanks to Barry Brown, Emma Lewin, Bob Makinson and Lyn Meredith

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ANPC Inc. Mission Statement

"To promote and develop plant conservation in Australia."

Contributing to *Danthonia*

Danthonia is a forum for information exchange for all those involved in plant conservation: please use it to share your work with others. Articles, information snippets, details of new publications and diary dates are all welcome. The deadline for the March 2001 issue is Friday 9th February, 2001.

Please send typed or handwritten articles, no more than 2 A4 pages, to Jeanette Mill by fax, mail, e-mail, or diskette. If sending by e-mail, please send in the body of the text or as an attachment in Word or Rich Text Format (rtf) to: anpc@anbg.gov.au

Illustrations or logos are always needed too, in the form of clear prints, slides or drawings.

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National Coordinator's Report

Jeanette Mill

Royal Botanic Gardens
Melbourne
- 9 FEB 2001
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Prof Henry Nix, ANPC founding Advisory Committee Chair, cuts the cake to celebrate the beginning of ANPC's 10th Anniversary year. Photo: Jeanette Mill

ANPC's 10th Anniversary

As the ANPC enters its tenth anniversary year I would like to extend an invitation to members to participate in this festive occasion. The next issue of *Danthonia* will be a special 10th anniversary edition, being published in the month (March) when, 10 years previously, plant conservationists around Australasia met with international leaders in networking, and resolved to form the Australian Network for Plant Conservation. If you would like to contribute reflections, words of wisdom, photos, poems or other such appropriate items to the March 2001 edition of *Danthonia*, please don't hesitate to contact me (contact details and deadline for copy appear on page 2).

The 10th Anniversary year was kicked off at ANPC Inc's second Annual General Meeting, held on November 28th at the Australian National Botanic Gardens. Prof Henry Nix, who has been in continuous committee positions since the ANPC's inception, first as founding Advisory Committee Chair, and currently as a member of the ANPC Inc Management Committee, blew the party blowers and cut the huge chocolate cake. (See inserts for reports of the meeting's proceedings.)

The Fifth ANPC National Conference will be the final fling for the 10th anniversary celebrations, and will be held in late 2001 or early 2002. Planning is commencing and several excellent venues are being considered in Melbourne and Geelong.

New Committee Members

The AGM was the venue for the announcement of the second ANPC Inc Committee. Most Committee members remain in their positions, and we welcome Gerald Mueller, who replaces Nita Lester as Treasurer. Louise Bull is standing down from the Committee, and the Committee thanks Louise and Nita for their efforts.

I would also like to thank all continuing Committee members for their support, and I look forward to working with them over the next two years.

Prior to the AGM, a seminar was held entitled **Tools for Plant Conservation: On-line databases and other information, including the Virtual Australian Herbarium.** Presented by Jim Croft, Director, Botany, Australian National Botanic Gardens (ANBG), the seminar outlined and demonstrated some of the databases and other resources which are being developed at the ANBG and the Centre for Plant Biodiversity Research as tools to support effective plant conservation.

Subtropical Seminar

Training, Best Practice and Networking for Plant Conservation was the theme of a seminar I presented to ANPC Subtropical Region members at Brisbane Botanic Gardens, Mt Coot-tha in August. The seminar was preceded by a tour of the Botanic Gardens. Our guide, Botanical Officer, Phil Cameron, explained the conservation status of the various threatened species the Gardens displays and studies.

Thanks to all those who have sent Christmas wishes to the ANPC. May I reciprocate by wishing all members the compliments of the season, and all the very best for 2001.

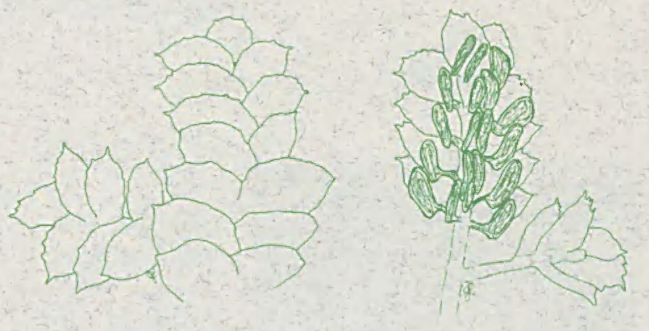
Last but certainly not least, I would like to thank Fiona Hall, ANPC Assistant Coordinator, for her amazing hard work over the last couple of years. Notable among Fiona's achievements were editing *Danthonia* and assisting with conference organisation. We all wish Fiona well with her new baby, and hope to see her back at ANPC in the near future.

(Continued from page 1)

Priorities for Australian bryophyte conservation

An Australasian section is included in the Action Plan. This section, largely compiled by Heinar Streimann, with contributions from Alan Fife and John Steel, summarises the current state of knowledge of the region's bryophyte taxa, including numbers of endemic species, hot-spots and important bryophyte habitats. It stresses that the *"depth of cryptogam knowledge and the numbers of practical bryophyte field studies are poor when compared to ... vascular plants"*. It outlines the major threats they face. Although there is little doubt that there are a number of vulnerable cryptogam communities, and possibly a number of endangered species, given the current level of knowledge it is not possible to identify such communities or taxa. So instead the report lists unique habitats and micro-environment niches that are currently limited or threatened, and makes the following recommendations:

1. Explore a number of unrecorded areas, including pockets of lowland tropical forests; monsoon vine thickets; areas between Rockhampton and Mackay, together with Cape York and the Torres Strait Islands; and moister and higher elevations of the Kimberley region of WA and Arnhem Land in the Northern Territory.
2. Identify unique and micro-environmental niches that are very limited in extent and threatened by various factors. Examples include river estuaries, lowland valleys, pockets of lowland tropical and sub-tropical forests in Australia.
3. Investigate areas under threat, for example: Cocos (Keeling) Islands, Lord Howe Island, Thursday Island, enclaves in the Pilbara, Brampton Island, and other Barrier Reef islands. Some of these areas have yet to be cryptogamically explored.
4. Compile a selective inventory program and undertake extensive field observations on the habitats, substrate preferences, and local distribution of a number of rare and potentially threatened bryophyte species.
5. Assess the vulnerability of rare and potentially threatened bryophyte species so that recommendations for future conservation strategies can be made.
6. Increase communication channels between bryologist experts and non-experts to ensure research is carried out with optimum efficiency and accuracy.
7. Recognise the critical need for more experienced bryologists in Australia. It is worth noting that relevant university courses do not currently include bryology on their syllabi.
8. Educate the public on the importance of bryophytes and their roles in the ecosystem.



L. Dorsal view of leaves on stem and branch
R. Ventral view showing specialised water-retaining sacs.
Lepidolaena fissistipula *(Steph.) Grolle. A rare liverwort from Queensland. Illustration: Judith Curnow, ANBG*

The IUCN Action Plan will be published soon, and IUCN will take pre-orders for copies now. Its formal title is: *Status, Survey and Conservation Action Plan for Bryophytes. Mosses, Liverworts and Hornworts.* Compiled by Tomas Hallingbäck and Nick Hodgetts. IUCN/SSC Bryophyte Specialist Group. ISBN 2-8317 - 0466-9

It can be ordered from: IUCN Publications Services Unit, 219c Huntingdon Road, Cambridge, CB3 0DL, UK.
Ph: +44 1223 277894; Fax: +44 1223 277175
E-mail: info@books.iucn.org
http://www.iucn.org/bookstore/

It costs £15 (approximately AUS$41) plus postage and handling. A discount of 33.3% is available to booksellers ordering direct from IUCN, to IUCN members (please give the name of your organisation to qualify), and bona fide students.

The 2000 IUCN World Red List of Bryophytes can be found at the following Internet site:
www.dha.slu.se/guest/SSCBryo/WorldBryo.htm

Acknowledgements

This article was put together with the kind assistance of Alain Mauric, Plants Officer, IUCN SSC Programme Office, Cambridge, UK.

Editor's Note

Readers may be interested to also consult the report: *A Conservation Overview of Australian Non-marine Lichens, Bryophytes, Algae and Fungi*, 1997, by George Scott, Timothy Entwisle, Tom May and Nell Stevens, Wildlife Australia, Endangered Species Program. Canberra, Australia.

New Wollemi Pine Site Found

Julie Ravallion,
Threatened Species Officer, Threatened Species Unit, Central Directorate,
NSW National Parks and Wildlife Service

L. Female cone and R. male cone, Wollemia nobilis
Illustration: David Mackay

12 week old seedling.
Illustration N. Oram

The discovery, in 1994, of the Wollemi Pine (*Wollemia nobilis*), a new conifer genus and species possibly dating back to the Jurassic age, generated enormous scientific and community interest both in Australia and internationally.

Six years later a third stand comprising 5 adults and a number of juveniles, has been discovered in remote terrain in Wollemi National Park. The pines were discovered in a deeper and narrower gorge than the first two stands and in a different catchment. The tallest of the 5 adults is about 20 metres compared to around 40 metres at the original sites. This discovery brings the total number of adults known to exist in the wild to 45.

NPWS rangers have visited the site and collected leaf, stem and soil samples and have recorded the site in detail.

The NPWS and the Royal Botanic Gardens are planning to undertake genetic analysis of the newly discovered pines. Previous genetic analysis of the original stands found no detectable genetic variation between individuals. Genetic analysis of the new population should provide further insights into the evolutionary history and potential of the species and will inform future management.

Under the Wollemi Pine Recovery Plan, this new site will also be subject to the same strict access and management protocols that apply to originally discovered stands. Access is restricted to scientists and authorised personnel.

Memberships due

Memberships are now due. Membership covers the year January to December. Please check the back page of *Danthonia* if you are not sure of your status.

A small rise in fees has been necessary this year – only the second in the 10 years of ANPC's operation. ANPC is increasingly required to be self-funding, and your continued support is extremely valuable.

Please use the inserted membership form to renew your membership.

And why not encourage your organisation or a friend to join? We will happily send a package of information, including a free sample copy of *Danthonia*, to anyone who you think may be interested.

Natural Heritage Trust 2001-2002 applications

Applications for the 2001-2002 round of Natural Heritage Trust funding are due on February 23rd 2001. Call the NHT hotline on 1800 065 823 for a copy if the Guide to Applications, or check the website http://www.nht.gov.au/.

Proponents in Queensland, Victoria and New South Wales should check with their regional Trust contact to obtain details of the preliminary assessment process / expression of interest process, in their State. These processes close earlier than the standard closing date, though every application received by the standard closing date is considered whether or not it is included in these preliminary assessment processes.

The World Conservation Congress - Amman

Associate Professor David Given
Chair, IUCN Species Survival Commission Plant Conservation Committee

The world congress is really the triennial or quadrennial business and summary meeting of IUCN, the International Conservation Union. It is at these congresses, formerly known as IUCN General Assemblies, that one comes to appreciate the size, complexity and scope of IUCN's work, through 14 programmes, 6 commissions, numerous committees and task forces, and many thousands worldwide supported by staff.

I was only present at the first part of the Congress, this year held in Amman, Jordan. The Jordanian government gave the Congress an enormously high profile, the opening being in a magnificent Roman amphitheatre by Queen Noor, who herself has a high personal interest in conservation of nature. The first days of the Congress were occupied by Commission and other specialist meetings and as the sessions were concurrent, and in some instances in venues some way from others, it mean that one had to make a commitment to be at certain key meetings and not others.

IUCN
The World Conservation Union

In my own case I attended the Species Survival Commission meetings - first of all a day of executive and steering committee meetings, followed by two days of Commission interaction. The plants section included a report from the Plant Programme Committee, followed by reports from several plant Specialist groups including ANPC. The plant reports were well received and showed that there is a solid grounding for plant conservation within SSC. The Amman SSC meeting ratified and accepted the Plant Conservation Strategic Plan, now available on the Plant Programme website of SSC.

The theme for the Amman Congress was "ecospaces" and a number of symposia and workshops featured different aspects of this - people's interaction with the landscapes and nature around them.

An important part of the Congress are the resolutions which are debated by IUCN members including NGOs and government representatives. This year there were fewer resolutions than usual, part of a deliberate attempt to try and reduce the number of 'local' resolutions on very specific issues. For plants there were several very significant resolutions approved, among them one to approve the concept of the Gran Canaria Declaration as a framework for a global plant conservation strategy. This originated in 1999 at the International Botanical Congress, and has now been ratified by a number of global meetings and programmes. IUCN is the latest to give approval and 2001 will see it debated at SBSTTA (the technical working meeting of the Convention on Biological Diversity).

There has also been approval of a set of principles for sustainable use of resources including plants, that has implications for forestry and farming, and for regional programmes such as Flora Europaea. Sustainability is a major debating point within the Union, which includes in its membership a very wide variety of views and positions on use of nature.

One thing that this Congress demonstrated was the pivotal role of volunteers. SSC is undertaking a review of volunteerism, led by Mark Stanley-Price, to assess the role of volunteers, how they can be encouraged, and problems in running a volunteer network. Whatever the conclusions, it is apparent that volunteers such as constitute the bulk of networks such as ANPC, will remain crucial to global conservation efforts as well as local initiatives.

See insert for Congress resolutions most relevant to plant conservation.

I would like to extend my thanks to David for presenting the ANPC report to the SSC meeting.

Ed.

A Request for Innovation from New Zealand

The Christchurch Botanic Garden is designing a Gondwana Garden to feature southern hemisphere plant families and genera, especially those which may have their antecedents well back in geological history. We would be very pleased to hear from other botanic gardens with similar display areas. Comments can be directed to David Given (givend@attglobal.net).

Translocation Trials for Four Threatened Western Australian Plant Taxa

Anne Cochrane, Leonie Monks* and Sophie Juszkiewicz#*

**Department of Conservation and Land Management,
CALMSCIENCE Division, Locked Bag 104 Bentley Delivery Centre WA 6983
Botanic Gardens and Parks Authority, West Perth WA 6005*

Introduction

The south-west of Western Australia has one of the most genetically diverse floras in the world, with over 8,000 taxa. Loss of habitat, weed invasion, salinity and dieback disease are major threats to native plant survival in this region. More than 300 taxa are considered under threat from one or several of these processes, with over 100 of these taxa listed as critically endangered. Many require recovery actions to prevent possible extinction, and many of these actions will include the long term storage of genetic material and the translocation of that material into new or existing populations.

The Western Australian Department of Conservation and Land Management (CALM) has developed a comprehensive *ex situ* conservation program to address loss of genetic diversity and potential extinction of populations in the wild. In 1992 a long term seed storage facility was established (the Threatened Flora Seed Centre or TFSC), to store seeds from rare and threatened taxa.

The TFSC aims to store a diverse sample of the genetic variation within each taxon to enable its successful reintroduction and establishment in the wild, assuming all other mitigating factors can be controlled.

Translocation

A translocation is the deliberate transfer of plant propagation material from one site to another (ANPC, 1997). A translocation is a conservation measure that attempts to safeguard the species by halting the decline in the number of individuals and conserve the genetic diversity of the species. The aim of a translocation project is to establish self-sustaining populations with a broad genetic base to ensure the potential for adaptation. The process of translocation requires careful planning, the establishment of specific guidelines and long term commitment to monitoring. In many cases translocation may be the last option for the survival of critically threatened plant species, where efforts to conserve wild populations are failing (disease, land degradation, salinity).

Lambertia orbifolia, L. echinata subsp. *echinata*, (Proteaceae), *Daviesia bursarioides* (Fabaceae) and *Grevillea calliantha* (Proteaceae) are all endemic to the southwest of WA, and are gazetted rare flora (Government Gazette, 1999). All are restricted in their geographic distribution, are known from few populations and generally have low plant numbers. Threats to these taxa include dieback disease, weed invasion, rising salinity, inappropriate fire regimes or clearing for agriculture.

Grevillea calliantha. *Illustration: Susan Patrick. Copyright: WA Herbarium.*

In 1997 CALM started the first of a series of experimental translocation trials. A total of 10 critically endangered taxa are being targeted for translocation, including these four taxa. This is the first time that a large scale systematic approach to plant translocation has been undertaken in Western Australia. In the past, translocation projects have failed or fallen by the wayside for a number of reasons, including a poor understanding of the biology and ecology of the species and a lack of commitment to monitor plantings. This project builds on limited existing information, and plans to collect additional data to help maximise the survival of these threatened taxa. The ultimate aim of this project, which is a collaborative effort between CALM, Perth's Botanic Gardens and Parks Authority (BGPA) and community groups (recovery teams), is to develop and implement protocols for the establishment of viable populations of a range of taxa.

Translocation

Seed from all four taxa was collected from wild stock between 1993 and 1997 and stored at the TFSC. It was germinated under controlled laboratory conditions and all seedlings were transferred to the accredited BGPA nursery. Seedling establishment in the nursery involved: (1) Hardening off, pricking out and establishing the seedlings. This was the most critical stage and usually took about 3 to 4 months depending on the individual development of seedlings. Excellent hygiene, good ventilation and fungicide treatment were essential. (2) Plant development in the open environment allowed seedlings to adjust for future planting out at the translocation sites and took from 2 to 3 months.

After five to seven months in the nursery, plants were transferred to the field either at the existing site of the wild population (population enhancement or restocking - *L. echinata* subsp. *echinata* and *D. bursarioides*) or at new secure sites (introduction - *G. calliantha* and *L. orbifolia*). New sites were needed for the latter as threats were unable to be satisfactorily reduced at the original sites. New sites were chosen in nearby reserves where soil and associated vegetation were similar to the known populations. Seedlings were planted under a range of treatments such as irrigation, mulching and covering with shade cloth, to test the best techniques for establishment.

The survival of seedlings during the three phases are shown in Table 1.

The survival of plants varied considerably, ranging from 13% to 71% of germinated seed, 33 months after initial seed germination. Losses occurred throughout all growing phases. Losses to *D. bursarioides* and *L. echinata* subsp. *echinata* mainly occurred during the translocation phase, probably due to late planting. Poor root establishment may have affected survival during the summer. Very few plant deaths were recorded prior to the hot dry conditions of the first summer.

Dieback disease seriously affected *L. echinata* subsp. *echinata* plants in the field. Flooding in the area during the warm summer of 1998 created ideal conditions for dieback to spread throughout the site, despite applying the fungicide Phosphite to the whole site and to individual seedlings. In the light of this failure, it is obvious that one of the dangers of translocation is a failure to address the threats that made the taxon threatened in the first place, and unless these issues are addressed prior to a translocation, survival of planting may be poor. Survival of both *G. calliantha* and *L. orbifolia* has been reasonably high (53% and 71% respectively). Both these taxa have been successfully grown in cultivation for a number of years, allowing any potential problems to be overcome.

Discussion

These findings highlight some of the problems that may be encountered in a translocation program that uses wild seed sources and standard nursery practices for the growth and transferral of genetic material to new and existing sites. The importance of maximising seed germination and seedling survival throughout the nursery and planting phases is vital to maintain the integrity of the genepool of each taxon, and ultimately, to the success of the reintroduction. The goal of a reintroduction is to establish self-sustaining populations that retain the genetic

*Table 1. Survivorship of four rare Western Australian taxa (*Lambertia orbifolia, L. echinata *subsp.* echinata, Daviesia bursarioides *and* Grevillea calliantha*) monitored over 15 months from seed germination under controlled laboratory conditions, through nursery cultivation to planting in the field.(Percentage in brackets denotes the overall survival of propagules at each phase of the growth process from seed germination)*

		Lambertia orbifolia **# of plants (% survival)**	***L. echinata*** **subsp.** ***echinata*** **# of plants (% survival)**	***Grevillea calliantha*** **# of plants (% survival)**	***Daviesia bursarioides*** **# of plants (% survival)**
Phase 1: Germination *(CALM Threatened Flora Seed Centre)*	Seed germination	298 (99%)	209 (77%)	136 (88%)	262 (58%)
	3 months after germination	270 (91%)	165 (79%)	133 (98%)	262 (100%)
Phase 2: Cultivation *(Botanic Gardens and Parks Authority)*	6 months after germination	238 (80%)	109 (52%)	110 (81%)	216 (82%)
	9 months after germination	216 (72%)	90 (43%)	106 (78%)	192 (73%)
	12 months after germination	215 (72%)	87 (42%)	106 (78%)	180 (69%)
Phase 3: Translocation *(CALM Flora Recovery Program)*	15 months after germination	213 (72%)	49 (23%)	84 (62%)	55 (21%)
	33 months after germination	211 (71%)	28 (13%)	72 (53%)	46 (18%)

(Continued on page 9)

Native Plant Conservation and the ANBG: 30 years on

John Hicks, Director, Parks Australia South, Environment Australia

It is wonderful to be part of the ANBG at the time of the 30th anniversary of its official opening by Prime Minister John Gorton. We have beautiful gardens that have broken new ground in the display of Australian plants.

In June 1966, in a paper prepared by the then Director, Mr David Shoobridge, for the Prime Minister, Harold Holt, outlining the vision for Canberra's proposed Botanic Gardens, he wrote:

"... it is necessary for greater effort to be made to complete collection from those parts of the Commonwealth where the natural environment is fast disappearing before pastoral and agricultural development; and to widen the scope of research and investigation to the point where the Gardens and herbarium can become a centre of botanical coordination of Australian flora."

With an innovative partnership with CSIRO in the Centre for Plant Biodiversity Research, close links with the *Flora of Australia* publishing program, and its support and hosting of the Australian Network for Plant Conservation, the Gardens is following this far-sighted vision.

Perhaps the Gardens' most influential role is in raising public awareness of our unique flora and the need for its conservation. This has been done through exhibitions such as 'It's a Rare Thing', the concentration of rare and threatened plants growing around the Visitor Centre and elsewhere in the gardens, its influence on the 13,000 students passing through our education programs each year, and an enthusiastic team of volunteer guides interacting with a broad range of visitors.

We now know that conservation requires far more than collecting plants from areas "fast disappearing before pastoral and agricultural development". *Ex situ* collections are only one part of a more complex strategy that must be mapped out for each threatened species. Significant results can only be achieved through partnerships that bring together the knowledge held in our herbarium databases, the research undertaken by scientists, the experience of our horticulturists and the enthusiasm of community groups. The gardens has a role to play in all these areas.

Increasingly it is the gardens' coordinating role that is making the difference – we are proud of our contribution

(Continued on page 10)

(Continued from page 8)

resources necessary to undergo adaptive evolutionary changes (Guerrant 1996). Losing those resources throughout the three phases of growth can diminish the survival chances of the new populations. However, the ultimate success of the reintroductions will only be evident after many years of monitoring by CALM. It will be necessary to augment populations that incur the greatest losses by germinating more seed stored at the TFSC.

From these preliminary findings we recommend:

- Paying attention to specific cultural details within the nursery phase (eg plant nutrition / trace elements that may be species- and site- specific).
- Ensuring threats have been removed (eg weeds, disease) at the translocation site prior to planting.
- Undertaking careful and sustained monitoring during all phases to ensure good data is collected for future work.

The authors can be contacted for further information on any aspect of this project.

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(Continued from page 9)

to the establishment of the Australian Network for Plant Conservation in 1991 and our ongoing role in hosting ANPC's National Office at the gardens. And we see as particularly important our current involvement in Australia's Virtual Herbarium – this innovative cooperative project involves drawing together the considerable store of plant knowledge held by the various State and Commonwealth herbaria and making it available to the community on the Internet.

Next year in April we are pleased to be joining the Council of Heads of Australian Botanic Gardens in co-hosting the 'Gardens 2001 Congress'. The Congress will bring together staff, volunteers and friends from the major state botanic gardens and almost 100 regional botanic gardens to discuss directions for public gardens in the 21st century around the theme of *conservation, culture or crass commercialism.*

Currently the Gardens is preparing a new *Plan of Management* to shape our direction for the next seven years. It fleshes out how we will continue our mission to grow, study and promote Australian plants. Naturally we would welcome your comments on the draft *Plan.* It is available at:

Joe McAuliffe, ANBG Nursery Manager, conducts a workshop on propagation techniques for the endangered Hakea pulvinifera *at the 1999 ANPC conference. Photo: Jeanette Mill*

http://www.anbg.gov.au/anbg/manplan/2000/

A good foundation has been set over the last 30 years. And we intend to build on this – striving to make more a difference to the effective conservation of Australia's plants and having an even better reason to celebrate when we are 50.

Drafts for Public Comment

NSW Draft Native Vegetation Conservation Strategy

The New South Wales Native Vegetation Advisory Council has released for public comment its Draft Native Vegetation Conservation Strategy, and accompanying background papers:

- Setting the Scene: Native vegetation of NSW
- Ecological Values and Processes of Native Vegetation
- Social Values of Native Vegetation
- Economic Values of Native Vegetation
- Aboriginal Cultural Values of Native Vegetation
- Arrangements and Opportunities for Native Vegetation Management
- Greenhouse and Climate Change Issues

Available from all NSW Department of Land and Water Conservation regional offices, the DLWC Information Centre, Ph: 02 9228 6415, and www.dlwc.nsw.gov.au/care/veg/conserv_strategy

For more information contact:
Rebekah Gomez-Fort, Ph: 02 9228 6235
Email: rgomezfort@dlwc.nsw.gov.au

CLOSING DATE – 31 MARCH 2001

Tasmania's Nature Conservation Strategy

A draft of *Tasmania's Nature Conservation Strategy (TNCS)* will soon be ready for public release. It is anticipated that the draft will be delivered for ministerial approval before Christmas, and will be available for public comment in early 2001. *TNCS* is in line with the *National Strategy for the Conservation of Australia's Biological Diversity*, and will address the general issues raised in the national document in a Tasmanian context.

To receive the draft document, please contact:

Biodiversity Unit,
Department of Primary Industries, Water and the Environment,
GPO Box 44A,
Hobart 7001, Tasmania.
Ph: 03 6233 6556 Fax: 03 6233 3477
Email: biodiv@dpiwe.tas.gov.au
Web page: http://www.parks.tas.gov.au/manage/natcon/biodiv/index.html

Research into the Establishment of Native Flora at the Centre for Mined Land Rehabilitation, The University of Queensland

Sean Bellairs, David Mulligan and Fiona Bartier

The Centre for Mined Land Rehabilitation (CMLR) was established at the University of Queensland in 1993 to facilitate a multi-disciplinary approach to the rehabilitation of land disturbed by mining operations. CMLR has staff representing the wide range of disciplines necessary to address issues related to mining environmental management. The role of the Centre is to provide the mining and mineral processing industries with research, education programs, technical information and consultancy services that will allow it to continue to gain access to mineral resources for the benefit of the community in an environmentally and economically acceptable manner. Research by CMLR is also increasing our general understanding of the biology and management of native flora and fauna, including rare species.

Major research strengths of the CMLR are in the areas of: prevention and minimisation of problems that arise post-disturbance; containment/remediation/rehabilitation of the impacts of existing disturbances; and the sustainability of reconstructed ecosystems on disturbed lands. Rehabilitation research is the Centre's core function and major research areas include: economic design of stable post-mining landforms; erosion control; co-disposal of mine wastes; waste capping strategies, solute movement and capillary rise; use of organic mulches and soil substitutes; seedbed preparation; soil moisture retention strategies; characterising nutrient deficits and heavy metal toxicities through soil solution chemistry; soil seed banks; breaking seed dormancy; inoculation of mine media with mycorrhizae and other microbial components; maximising direct-seeding success; increasing species richness through use of native understorey species; plant litter decomposition and nutrient cycling; fauna habitat reconstruction; development of success criteria and assessment of ecosystem sustainability. In addition to the academic members of staff from various departments and schools that collaborate on CMLR projects, CMLR employs 25 full-time research staff, and 23 postgraduate research students are currently enrolled on Centre-related projects.

CENTRE FOR MINED
LAND REHABILITATION

CMLR is undertaking industry-funded projects in Queensland, New South Wales, Western Australia, and the Northern Territory, involving the coal, bauxite, alumina, base metals, gold, heavy mineral sands and phosphate industries. Funding for Centre projects from sources other than mining companies includes the Australian Coal Association Research Program, Australian Mineral Industries Research Association Limited, Australian Research Council, New South Wales Minerals Council, Parks Australia North, and Environment Australia. CMLR also has collaborative projects with other universities, state government departments, Environment Australia, Greening Australia, and environmental consulting firms.

Much of the research by CMLR is investigating the re-establishment of native vegetation communities on previously mined land involving various mine commodities and climatic ranges. We are finding that establishing a sustainable native flora community on severely disturbed land is a complex process and many aspects need to be taken into account. All components of the vegetation that are required to create a stable ecosystem, including understorey as well as overstorey species, need to occur in vegetation communities being rehabilitated to native bushland. Native understorey species assist in erosion control, help to maintain soil structure, assist microbes to cycle nutrients, inhibit weed invasion, provide habitat for native fauna and increase the aesthetic value of the vegetation. Recent CMLR research has investigated seed viability and germination characteristics of a wide range of species to develop methods to facilitate their establishment on specific mine media requiring revegetation. Many native grass and understorey species have seed dormancy mechanisms and require treatments such as scarification, heat, smoke, leaching or after-ripening before the seeds will germinate. Glasshouse studies are used to investigate the media tolerances of native species to match them to appropriate soil or mine spoil conditions. Other experiments trial selected species under field conditions.

Developing rehabilitation success criteria is another aspect being investigated at many mine sites throughout Australia. Success criteria are moving away from simple vegetation density requirements towards consideration of the functional requirements of an ecosystem. This requires understanding the ecological processes of both rehabilitated and natural systems. Along with developing an understanding of the ecological processes, development of indicators of those processes is essential so that mine site environmental officers and regulators can identify whether these functions are successfully occurring. In some cases, an indication is required that processes that don't occur in young communities are likely to occur successfully in the future. For example, the system may not yet be sufficiently well developed for recruitment of long-lived tree species to occur but indicators of likely future recruitment are desired prior to the trees reaching maturity. Ideally, early indicators of failure or deficiency of processes are required to allow cost-effective remedial action to be taken.

CMLR is also developing Postgraduate Coursework Programs in environmental management for mining. These programs will provide the national and international minerals and energy industries with excellence in mining environmental management education through increasing the knowledge of best practice principles, and enhancing the technical skills and environmental awareness of both practitioners and management. These programs will cater to the increasing demand for continuing professional education within the minerals industry, and will be readily accessible through innovative flexible delivery modes.

One research program at the CMLR is investigating the biology and ecology of the vulnerable plant species, *Tetratheca juncea*. *Tetratheca juncea* is a small heath-like shrub that occurs from Buladelah to North Wyong on the central coast of NSW. Its known distribution includes land leased by coal mining companies. The project's aim is to provide research support to assist in the development of a recovery management plan for *Tetratheca juncea*.

The *Tetratheca* project is investigating five major areas: breeding system and pollinators; phenology and growth requirements; seed germination; soil seed bank; and mycorrhizal dependency. The research project will utilise this species as a model case study for the mining industry to use when dealing with threatened species. The CMLR is working in collaboration with researchers from The University of New England, The University of Newcastle, and Ecological Surveys & Management. The research team is being supported by three mining companies (Powercoal, Coal Operations Australia and Oceanic Coal), the NSW National Parks and Wildlife Service, Lake Macquarie City Council, Wyong Shire Council and the NSW Minerals Council.

For further information please contact:

Dr David Mulligan, Director,
Centre for Mined Land Rehabilitation,
The University of Queensland,
St Lucia Qld 4072
Ph: 07 3365 3457
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Endangered Fungi Community Listed

A small fungi community in Sydney's Lane Cove Bushland Park has been listed as an endangered ecological community under New South Wales' *Threatened Species Conservation Act* - the first such listing for fungi in Australia. The Hygrocybeae community, restricted to warm temperate rainforest in the Park's Gore Creek catchment, includes 20 known species, and other undescribed species.

Source: LAWN Clippings, Feb. 2000

Are You Networked for Plant Conservation?

The new ANPC plant conservation email list is going from strength to strength with over 200 subscribers already and much positive feedback. Add your name to the list to hear about plant conservation initiatives at home and overseas, grant application deadlines, positions vacant, conferences, workshops, fieldwork, etc. and to exchange plant conservation information with others.

To subscribe, unsubscribe or post a message, send an email to: anpc@anbg.gov.au

Research Round-up

This new page aims to bring to the attention of plant conservation practitioners relevant recently published and on-going research that might inform their work. Contributions to this page are welcome, as are comments about how we can make it more useful to you.

Converting a dairy farm back to rainforest: The Rocky Creek Dam Story. Ralph Woodford. *Ecological Management and Restoration* 1(2), 83-92. A rainforest regenerator reports on a project to foster rainforest regeneration near a major remnant.

Translocation of the Plains Rice-flower (*Pimelea spinescens* subsp. *spinscens*), Laverton, Victoria. Stephen G. Mueck. *Ecological Management and Restoration* 1(2), 111-116. Report on trials to transplant rare plants from a development site to a conservation reserve.

Sampling designs, field techniques and analytical methods for systematic plant population surveys. David A. Keith. *Ecological Management and Restoration* 1(2), 125-139. Detailed, step-by-step guidelines to improve the rigour of rare plant surveys.

Environmental Weeds

Researchers from CSIRO and the Weeds Cooperative Research Centre have released the rust fungus, *Puccinia myrsiphylli*, in NSW, SA and WA in the latest bid to bring Bridal Creeper, *Asparagus asparagoides*, under control. Bridal Creeper, introduced as an ornamental plant, is now found in every state, and smothers vast areas of natural bushland, including habitat of plant species such as the nationally endangered *Acacia pinguifolia*.
For more information contact:
Dr Louise Morin Ph (02) 6246 4355.

The October 2000 issue (v25, No 5) of *Austral Ecology* is devoted to the theme of environmental weeds. Articles appearing in the issue include:

Environmental weeds in Australia and New Zealand: issues and approaches to management. Jann A. Williams and Carol J. West. *Austral Ecology.* 25(5), 425-444.

Ecological characteristics of *Brachychiton populneus* (Sterculiaceae) (Kurrajong) in relation to the invasion of urban bushland in south-western Australia. M. Buist, C.J. Yates and P.G. Ladd. *Austral Ecology.* 25(5), 477-486.

Dear Editor

In the 'research round-up' section of the June 2000 issue of *Danthonia*, two research projects by David Lindenmayer and Jamie Kirkpatrick were reported as being funded by the Land and Water Resources R&D Corporation (LWRRDC). This is only half the story, as the research was jointly funded by LWRRDC and Environment Australia through the National Remnant Vegetation R&D Program. The first phase of this very successful program finished on June 30, 2000, with the second phase (called the Native Vegetation R&D Program) starting the next day! The second phase is a multi-partner program (including State Agencies, CSIRO and Greening Australia), being managed by LWRRDC, which aims to support projects that will lead to improved management of native vegetation to sustain land, water and biodiversity. It also aims to strengthen the links between science and research capability, and vegetation policies, programs and on-ground management in the broad context of natural resource management.

Kind regards,
Dr Jann Williams
Ph: (03) 9925 1014
jann.williams@rmit.edu.au

ANPC Fundraisers

ANPC has joined the *Nature Australia* Associate Member scheme. *Nature Australia* will list ANPC's contact details on its Society page, and donate $5 to ANPC for each subscription to *Nature Australia* made using the form you will find inserted in this issue of *Danthonia*. You must nominate the ANPC as your chosen recipient Associate Society.

ANPC members have responded tremendously to the beautiful 2001 *Australian Cryptogams* calendar produced by Judith Curnow and Heino Lepp. $1 from the sale of each calendar is donated to the ANPC, and within a couple of weeks of this being announced on the ANPC email list, 55 calendars had been sold to ANPC members. See insert in this issue for details.

Thank you for your support!!

Publications & Information Resources

2000 IUCN Red List of Threatened Species

Compiled by Craig Hilton-Taylor.
IUCN Species Survival Commission. 2000.

The aim of the IUCN Red Lists is to have a comprehensive and scientifically authoritative listing of all globally threatened species. IUCN first published a listing of the world's globally threatened vascular plants in 1997. The result was a big city telephone-book sized tome. The 2000 Red List includes plants and animals and provides taxonomic, conservation status and distribution information on taxa that have been evaluated using the IUCN Red List Categories.

It has been produced on CD-Rom and is searchable on its own website at www.redlist.org. The Analysis is published as a booklet.

The Red List includes 5,611 species of threatened plants, many of which are trees, since these species have been relatively thoroughly assessed. Some 80 cryptogam species have been included. The total number of globally threatened plant species is still small in relation to the total number of described plant species, but this is because only 4% of the world's identified plant species have been assessed for their level of threat. Habitat loss and degradation affect 91 percent of threatened plants assessed, according to the launch information kit, which can be found at
http://www.iucn.org/redlist/2000/index.html.

It is a requirement for submitting data to the Red List that species be evaluated by an independent Red Listing Authority using the IUCN Red List Categories. Due to lack of resources to establish an Australian Red Listing Authority, the Australian entry in the listing is very limited this year. Preliminary discussions are occurring to overcome this problem, and I would be keen to hear from anybody who is interested in furthering this issue. Jeanette Mill (contacts page 2).

Bastard Quiver tree (Aloe pillansii) *is a Critically Endangered tree aloe occurring in the Northern Cape of South Africa and southern Namibia. The species is featured on the cover and website of the 2000 Red List.*

Photo: Craig Hilton-Taylor.

For copies of the Analysis/CD package contact:

IUCN Publications Services Unit
219c Huntingdon Rd, Cambridge, CB3 ODL, UK. Ph: +44 1223 277 894 Fax: +44 1223 277 175
Email: info@books.iucn.org.

For more information:
IUCN Red List Programme Office:
Ph: +44-1223-277966 Fax: +44-1223-277845
Email: craig.hilton-taylor@ssc-uk.org

Mechanisms for Biodiversity Conservation on Private Land

Gary Stoneham et al. July 2000.

Published by the Victorian Department of Natural Resources and Environment. This report can be obtained free of charge from NRE. Ph: 03 9637 8325.
Email: customer.service@nre.vic.gov.au

Disappearing Acts: A Guide To Australia's Threatened Species Law

National Environmental Defender's Office Network

The guide costs $20 (plus postage) and can be obtained from the EDO for $20 plus postage.
Ph: 02 9262 6989, website http://www.edo.org.au.

Waratah: *A database on the germination of native tree and shrub species in NSW*

Developed by Mary-Anne Murray
Centre for Mined Land Rehabilitation. 1999.

CD-ROM . To obtain a copy contact Ph: 07 3365 8552
Fax: 07 3365 3452 Email: waratah@cmlr.up.edu.au

International Agenda for Botanic Gardens in Conservation.

Wyse Jackson, P.S. and Sutherland, L.A. (2000)
Botanic Gardens Conservation International, U.K.

This is a complete rewriting of the Agenda, the first of which was published in 1989. The new Agenda is the result of international consultation, and was launched at the World Botanic Gardens Congress on 25 June 2000. It includes significant developments in conservation, such as the Convention on Biological Diversity, and encourages action-based target-setting for botanic gardens in contributing to such initiatives.

Available from BGCI, Descanso House, 199 Kew Rd, Richmond, Surrey, TW9 3BW, UK.
Ph: +44 (0)20 8332 5953 Fax: +44 (0)20 8332 5956
Email: bgci@rbgkew.org.uk

Incentives for Sustainable Land Management: Community cost sharing to conserve biodiversity on private lands.

Paul Bateson

A guide for local government written by the National Bushcare Local Government Facilitator with Environs Australia, the Local Government Environment Network in partnership with Environment Australia.

Available free of charge from the Community Information Unit of Environment Australia,
Ph toll-free 1800 803 772

Hotspots: Earth's biologically richest and most endangered terrestrial ecoregions.

Russell A. Mittermeier, Norman Myers, Patricio Robles Gil and Cristina Goettsch Mittermeier. 1999.

Available from Zoo Book Sales, P.O. Box 405, Lanesboro, MN 55949 Ph: (507) 467-8733
Fax: (507) 467-8735 Email: zoobooks@means.net

Electronic Addresses

SABONET: Southern African Botanical Diversity Network www.sabonet.org

Newsletter of the Canadian Botanical Conservation Network
http://www.rbg.ca/cbcn/en/newsletters/

Tussock Grasslands website
http://www.tussocks.net.nz

Rural Industries Research and Development short reports
http://www.rirdc.gov.au/pub/shortreps/contents.html

WORLDMAP is software for exploring geographical patterns in diversity, rarity and conservation priorities from large biological datasets. Site contents include: Biodiversity Value, Rarity & Endemism, Conservation Priority & Gap Analysis, Biogeography, Worldmap Software, Key References, Publications
http://www.nhm.ac.uk/science/projects/worldmap/

IUCN sites

All 104 Resolutions approved by the Second IUCN World Conservation Congress, Amman, Jordan, October, 2000, can now be found on the Web by clicking http://iucn.org/amman/index, Official Documentation, Resolutions and Recommendations.
A sample of resolutions of the most immediate relevance to plant conservation are included as an insert in this issue of *Danthonia*.

The final version of the Species Survival Commission (SSC) Strategic Plan is now on the SSC website, with an introduction at
http://www.iucn.org/themes/ssc/news/stratplanintro.htm

The Amman SSC workshop report is at
http://www.iucn.org/themes/ssc/memonly/amman.htm

The triennial report 97-99 is available at
http://www.iucn.org/themes/ssc/memonly/trienreport9799.htm

Anyone wishing to see these documents and unable to download them from the Web please contact Wendy Strahm and she will either send them as an email attachment, or put them in the post to you!

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Ph: +41 22 999.0157, Fax: +41 22 999 0015
Email: was@hq.iucn.org

Conferences

Eradication of Island Invasives: Practical Actions and Results Achieved. An international conference of the Invasive Species Specialist Group of IUCN, to be held at the University of Auckland, Auckland, New Zealand from 19 to 23 February 2001. For more information visit the website http://www.issg.org or contact Mr Dick Veitch, Ph: +64-9-298-5775, mobile: +64-25-200-5490, Email: dveitch@kiwilink.co.nz

Planta Europa: Developing a Plant Conservation Strategy for Europe. The third European conference for the conservation of wild plants, 23 – 28 June 2001, Pruhonice, The Czech Republic.
Ph: 00 44 (0)20 7808 0106, Fax: 00 44 (0)20 7730 8377,
Email:conference@plantaeuropa.org,
http://www.plantlife.org.uk/html/
partnership_planta_euro_conference.htm

Fenner Conference on the Environment: Biodiversity Conservation in Freshwaters - Same Landscape, Different Perspective. 5–8th July, 2001, Canberra.
Contact Arthur Georges.
Email: director@aerg.canberra.edu.au with the subject heading Fenner Conference.

Society for Conservation Biology 15th Annual Meeting: Ecological Lessons from Islands, including such figurative islands as isolated fragments of habitat within altered landscapes.
29 July - 1 August 2001. University of Hawaii in Hilo, Hawaii. http://www.uhh.hawaii.edu/~scb/
Contact Bethany Woodworth Ph: 808-967-7396 x 237
Email: Bethany_Woodworth@usgs.gov

5th International Flora Malesiana Symposium,
9 - 14 September 2001, Sydney, Associated Workshops, Cairns. Email: fmv@rbgsyd.gov.au
http://plantnet.rbgsyd.gov.au/fm/fm.html

Association of Societies for Growing Australian Plants 21st Biennial Conference and seminar: Australian Plants in a Changing World.
29th September - 5th October, 2001, Canberra.
Contact Hilary Merritt, Ph: 02 6236 9317

2001 Minerals Council of Australia 26th Annual Environmental Workshop: Back to the Future.
14 - 19 October 2001, Broken Hill, NSW.
Call for papers Ph: 02 6279 3634
http://www.minerals.org.au/files/home/papers.pdf

Courses/workshops/field work

Postgraduate Courses in Mining Environmental Management

Masters, Graduate Diploma and Graduate Certificate in Mineral Resources (Mined Land Rehabilitation).
Contact: Fiona Bartier, Centre for Mined Land Rehabilitation, The University of Queensland, Brisbane, 4072.
Ph: 07 3365 1176 Fax: 07 3365 3452
Email: f.bartier@cmlr.uq.edu.au

Greening Australia Victoria Training Programs

Port Phillip Community Training Program. For individuals and community group members involved in vegetation restoration activities.

For further information contact Kate Stothers on:
Ph: 9457 3024 Fax: 9457 3687
Email: kstothers@gavic.org.au
http://home.vicnet.net.au/~gavic/training.htm

Regional Groups

Subtropical Region

See National Coordinators report (page 3) for write-up of Brisbane seminar, August, 2000. *Training, Best Practice and Networking for Plant Conservation.*

Sydney Region

Tracey Armstrong, Mount Annan Botanic Gardens

Newnes Plateau Report

On Saturday, 25th November, the Sydney Region group met at the Blue Mountains Heritage Centre at Blackheath for a slide presentation of the rare and/or beautiful plants of the upper Blue Mountains, followed by a bushwalk. As we drove up the mountains through mist, misty rain, cloud and fog, the bush walk bit wasn't looking too enticing.

Philip Moore, co-author of *Native Plants of the Sydney District*, took us on a virtual tour of the Grose River, Newnes Plateau, Kanangra Walls and Wanganderry Tablelands where we saw *Hakea dohertyi, Hakea constablei, Leucochrysum graminifolium, Calanthe triplicata* and many more. This gave us a taste of what we were about to see as we drove off into the mist heading for the Newnes Plateau. But the mountains were just playing with us, and as we descended below the cloud layer it became a beautiful sunny day which was not too hot. Perfect for a bush walk.

As well as Philip, we were lucky to have with us Peter Hind from the Royal Botanic Gardens, Sydney. Peter has spent so much time in the Newnes area that he is on first name terms with most of the plants, in fact, a number of the plants have been named after him eg. *Persoonia hindii*. This meant that all our botanical questions were answered immediately, which was a luxury not often available on your average bushwalk.

We regrouped at the Zig Zag Railway and then drove along the road to the Glowworm Tunnel. In the slashed areas under the powerlines there were fields of purple *Patersonia* in full flower – I've never seen so many out at one time. In the bush alongside the road there were also splotches of colour made up of *Caladenia, Diuris, Boronia, Persoonia, Hibbertia, Gompholobium* and many others. We stopped throughout the day to have a closer look at some of the plants, and at Murray's Swamp we saw the naturally occurring hybrid *Grevillea x gaudichaudii* growing beside both parents, *G. acanthifolia* and *G. laurifolia*, as well as masses of pink *Boronia*. We also saw a fine looking large Wolf Spider with a leg span of around 6 cm. Nearby was its silk-lined burrow, and we saw several more holes in the swampy peaty ground.

Further along we came across *Isopogon prostratus* and a patch of brilliant orange/red *Gompholobium uncinatum*, it was so bright it looked like *Lechenaultia formosa*. It was here that we noticed the drifts of Caper White Butterflies over the fields of *Patersonia*, all floating north in an immense migration. Interestingly, the caterpillars of these butterflies feed on *Capparis* species, which don't occur naturally much further south than Newcastle. We were quite a way south of Newcastle and the butterflies were coming up in flotillas from further south. I suspect therefore that they either feed on other species, or they have found a lot of cultivated *Capparis* to munch on.

We stopped at some pinnacles in the Gardens of Stone National Park where *Leucochrysum graminifolium, Callitris endlicheri and C. rhomboidea* were growing together in most inhospitable surroundings, right on the sandstone in skeletal soils. It was a striking landscape.

The last stop was the carpark at the end of the road where we walked down to the Glowworm tunnel. It was black as pitch until your eyes adjusted and were able to pick out the little constellations of Glowworms with their ice-blue light. Some of them were low down on the walls and we got to see close-up the little strings of sticky beads which they use to trap their flying insect prey as it flies toward their light. I guess they are the insect counterpart of *Drosera*. Martyn Robinson, from The Australian Museum, filled us in on the private life of the Glowworm, which was very interesting.

Out the other end of the tunnel was another world. A forest of tree ferns and dripping water, *Dicksonia antarctica, Cyathea australis, Todea barbara and Blechnum nudum*. And the track wound on to Newnes, but we didn't have time to walk it – perhaps another day.

Tracey Armstrong, ANPC Sydney Group Regional Coordinator, Mount Annan Botanic Garden, Mount Annan Drive, Mount Annan NSW 2567
Ph: (02) 4634 7939
Email: Tracey_Armstrong@rbgsyd.gov.au

NSW South West Slopes Region

Paul Scannell, Albury Botanic Gardens

Angela Butler finds a new plant of Caladenia concolor

Photo: Paul Scannell

Spring has been a busy time all round with surveys, monitoring and workshops happening all over the place.

Crimson Spider Orchid Recovery Plan

Threatened species surveys were carried out from late August to mid October for *Caladenia concolor* and our Albury population was boosted by one this year, when Angela Butler of the Californian Conservation Corps (CCC) found a new single plant. Located some 500 metres away from the original population, it is an important find for the Recovery Team and the future of *C. concolor*. Dave Mallinson from Canberra was involved in conducting the major part of the survey this year and it was great to be able to wander around the bush and take in some of his amazing knowledge.

The 15 volunteers from the CCC were in Australia as part of an on-going exchange program, and they spent a full week in Albury through the Australian Trust for Conservation Volunteers program. They were kept busy with threatened species surveys, fencing, weed removal and planting tubestock. The planting included wetland understory for fauna habitat and canopy connection for birds in an important corridor along a creek bed in the Crimson Spider Orchid area.

The weed removal work has been ongoing over 7 years at Gap Rd and has seen a remarkable recovery by the bush. It was a great spot to show people around during Weedbusters Week. Tree Lucerne, Cotoneaster and Broom (which is still being sold in supermarket nurseries!) were the main targets this year, and a huge thank you to Peter and the CCC for their valuable work.

NSW Biodiversity strategy and Crown Lands weeds funding have enabled works to be carried out by community volunteers and ATCV crews.

The germination trials of seed of a similar but as yet undescribed species at King's Park and Botanic Garden in Perth, WA have begun, and this year after cross pollination 5% of the seed from a single capsule of *C. concolor* has been sent over as well. Hopefully, results from the trials may be of use in the future for *C. concolor*, if required.

Similar trials with *C. rosella* at RBG Melbourne have shown increasing success and this information will be invaluable.

Lone Pine State Forest community survey

The Lone Pine State Forest at Corowa, NSW, was host to 70 professional researchers and local volunteers, conducting a community biodiversity survey in early October. National Parks Association organised the event and it was a great turnout. The interesting results will be available shortly and will certainly give the Corowa Landcare groups a valuable insight into what's out there and future land management strategies.

ANPC display

The first "IMBY" (In My Backyard) environment festival was held in Albury/Wodonga on 14th Oct. The ANPC poster display and handouts attracted a lot of interest and many people stopped to discuss threatened species and communities, what local volunteers were involved in and workshops and courses. It was fantastic to see the children running around making nesting boxes, taking water samples and making mud bricks. This meant the parents stopped for a chat and were able to take in some of the information available at the 24 stands.

Paul Scannell, Regional Coordinator:

Ph: (02) 60 238 769; Fax: (02) 60 416 527
Email: accgardn@albury.net.au.

Tasmanian Region

Contact: Andrew Smith,
Parks and Wildlife Service, Tasmania.
Ph: (03) 6233 2185 Fax: (03) 6233 8308
Email: andrews@dpiwe.tas.gov.au

The Australian Network for Plant Conservation Inc. Membership List

The date in brackets indicates that the member has joined or renewed for that year. Addresses and names of contact persons are available from the National Office. *Note*: Memberships are valid for the calendar year.

Corporate Members

ACT Parks and Cons. Service, ACT (1998)
Adelaide Botanic Gardens, SA (2000)
Albury Botanic Gardens, NSW (2000)
Alcoa of Australia Ltd., WA (2000)
Australian National Botanic Gardens (2000)
Aust Tree Seed Centre (CSIRO), ACT (1999)
Biodiversity Group, Environment Australia, ACT (2000)
Brisbane Botanic Gardens, QLD (1999)
Caloundra City Council, QLD (1998)
Centre for Mined Land Rehabilitation, QLD (2001)
Centre for Plant Biodiv Rsch, ACT (2000)
Centre for Plant Conservation Genetics, NSW (2000)
Coffs Harbour City Council, NSW (2001)
Council of the City of Orange, NSW (2000)
CSIRO Publishing, VIC (2000)
Defence Estate Organisation, ACT (1998)
Dept of Conservation and Land Management, WA (2000)
Environment ACT (1999)
Eurobodalla Native Botanic Gardens, NSW (1999)
Flecker Botanic Gardens, QLD (2000)
Forestry Tasmania, TAS (1999)
Gladstone Tondoon Botanic Gardens, QLD (1998)
Kings Park and Botanic Gardens, WA (1998)
Logan City Council, QLD (1998)
Macedon Ranges Shire Council, VIC (1999)
Maroochy Shire Council, QLD (2000)
Minerals Council of Australia, ACT (1999)
Mount Tomah Botanic Garden, NSW (1998)
Norfolk Island Botanic Garden (2000)
North Forest Products, TAS (1998)
NSW National Parks & Wildlife Service, NSW (2001)
Olympic Co-ordination Authority, NSW (1998)
Pacific Power, NSW (2000)
Parks and Wildlife Commission of the NT (2001)
Parks Australia-North, Christmas Island (1999)
Qld Parks and Wildlife Service, QLD (2000)
Queensland Herbarium, QLD (1998)
Randwick Council Depot, NSW (1998)
Redland Shire Council, QLD (1999)
RGC Mineral Sands Limited, WA (1998)
Roads and Traffic Authority NSW, NSW (2000)
Royal Botanic Gardens Melbourne, VIC (2000)
Royal Botanic Gardens Sydney, NSW (2001)
Royal Tasmanian Botanical Gardens, TAS (2000)
Standing Committee on Forestry, ACT (1999)
Strathfield Municipal Council, NSW (2000)
Tasmanian Parks & Wildlife Service, TAS (1999)
The Australian Arid Lands Botanic Garden, SA (2000)
Townsville City Council, QLD (1999)
WMC Olympic Dam, SA (2000)
Wollongong Botanic Garden, NSW (2000)
Zoological Parks and Gardens Board of Victoria, VIC (2001)
Zoological Parks Board of NSW, NSW (2000)

International Associates

Auckland Plant Collections Network, NZ
Botanic Gardens Conservation Intl, UK
Botanical Research Institute of Texas
Botanischer Garten und Botanisches, Germany
David Brackett, SSC, IUCN
Canadian Botanical Conservation Network
Center for Plant Conservation, USA
Columbus Zoo, Ohio, USA (1998)
Conservatoire et Jardin Botaniques, Switzerland
Don Falk, USA
John Donaldson, South Africa (2001)
Georgia Endangered Plant Stewardship Network, USA
David Given, NZ (2000)
Craig Hilton-Taylor, UK
Honiara Botanic Gardens, Solomon Islands
Indian Society for Conservation Biology
Indonesian Network for Plant Conservation
Kebun Raya Indonesia
Missouri Bot. Gardens Library (1999)
Dr Neil Mitchell, NZ (2000)
Suresh Narayana, India
National Botanical Institute, South Africa
Jeanine Pfeiffer, USA
PlantNet, UK
Provincial Museum of Natural Sciences, Argentina
Rare Plant Consortium, Canada
Royal Botanic Gardens, Kew, UK (2000)
SABONET, South Africa
Society for Ecological Restoration, USA, (1998)
Pritpal Soorae, IUCN/SSC, Kenya
Dr I Wayan Sumantera, Indonesia
Suva Botanical Gardens, Fiji
Roy Taylor, Canada (2001)
Andrew Townsend, NZ (1998)
South Pacific Regional Herbarium (2000)
Vailima Botanic Gardens, Western Samoa
Wellington Plant Conservation Network
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